

Introduction

For the purpose of progress in scientific research, in Japan, the Ministry of Education, Science and Culture supports many research projects covering various branches of science. Research Group R21-3, "Experimental Studies on the Effects on Health of Nitrogen Oxides," was organized in 1981 and continued its work until 1984.

In this monograph, the members of the Group describe, in the form of a review, the health effects of nitrogen oxides based on their results obtained in the research project and afterwards up to the present. Also, in addition to these reports, a paper on morphometrical findings (Kubota et al.) of the effects of nitrogen dioxide is included.

At the start of this Group's work, research subjects were limited to experimental studies, and individual themes selected were beyond the limit of traditional ideas. Members of the Group consisted not only of researchers specializing in the field of air pollution but

also included those who were expected to be able to make a contribution to the field by application of their academic achievements.

The characteristics of each selected theme were based on the following ideas. Special attention was paid to the effects of nitric oxide which had previously been neglected in the field of toxicology of nitrogen oxides, together with studies on the effects of nitrogen oxides on nonpulmonary systems. As to the effects on the respiratory system, new perspectives such as lung lipids, mast cells or morphometrical studies were added.

These papers are the result of a considerable effort on the part of the members, to whom I am grateful for their contribution.

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